



**CRITICAL AREA REPORT
AND
BUFFER MODIFICATION PLAN**

FOR

SCRIVANICH-116TH STREET

Wetland Resources, Inc. Project #13185

Prepared By:

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Executive Summary

Project Name: Scrivanich – 116th St.

Location: Parcel numbers 3226059114, -135, -078, -083, and -113 between NE 112th St. and NE 116th St. in the City of Kirkland.

Limit of Study: The subject properties, the adjacent parcel to the south/east (#3226059151), and those portions of adjacent properties visible from the edge of the subject property.

Applicant: Larry Scrivanich
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Wetland Resources Staff: Jim Rothwell, PWS (Senior Ecologist), and Nick Whiting (Associate Ecologist).

Critical Areas Determination: One wetland (Wetland A) was observed on the subject property, extending offsite to the south and slightly to the east. This wetland is categorized as a Type 3 wetland that requires a 50-foot protective buffer per Kirkland Zoning Code (KZC) section 90.45. No streams were observed on or near the subject property.

Proposed Project: The applicant is proposing to construct a 27-lot plat on the subject property. In order to achieve this, buffer width averaging must be employed.

1.0 PROPOSED PROJECT

1.1 INTRODUCTION

Wetland Resources, Inc. (WRI) performed a series of site investigations in August 2013, July 2014, and July 2015 to locate jurisdictional wetlands and streams on and in proximity to King County parcel numbers 3226059114, -113, -135, -083, and -078. The subject property is located between NE 116th Street and NE 112th Street in the City of Kirkland, Washington. The Public Land Survey System (PLSS) locator for the subject property is Section 32, Township 26N, Range 05E, W.M. The study site is situated within the Cedar/Sammamish Watershed, or Water Resources Inventory Area (WRIA) 8, as well as the City of Kirkland Forbes Creek Drainage Basin.

The 5.20-acre subject property is comprised of five separate parcels, three of which are developed. Parcel numbers 3226059114, -083, and -078 each contain a single-family home while parcel number -113 contains a small garage/accessory structure near the northern property boundary (the majority of the parcel is undeveloped). Parcel 3226059135 is undeveloped yet appears to be used by the parcel to the north (number -078). The subject property is located in a residential setting that also contains some commercial use. Housing subdivisions border the subject property on the east and northwest while single-family parcels are located to the south and southwest. The northern property boundary is bordered by NE 116th Street; NE 112th Street is located to the south. Interstate 405 (I-405) is approximately 2,000 feet to the east, the Totem Lake neighborhood is approximately 2,800 feet to the north and northeast, and downtown Kirkland is located approximately 2 miles to the southwest.

Vegetation on the subject property is comprised of upland forested and scrub-shrub species, wetland species, landscaped areas, and maintained lawn. A large landscaped area is located on parcel 3226059113, immediately south of parcel -114. A relatively dense forested area containing native species sits to the south of the landscaped area and encompasses the remainder of the parcel. Parcel 3226059135 is dominated by native conifers and low-growing herbaceous vegetation. The northernmost portion of the study site slopes down gently to the south-southeast while the slope gradually steepens on the center portion of the site. The southern portion (on parcel -113) then slopes down gently again to the south-southeast. Parcel -083 is relatively flat.

One Type 3 wetland was identified on the subject property during the site investigations. The subject property is located in a City of Kirkland primary basin; Type 3 wetlands found in primary basins require 50-foot buffers from their delineated edges (Kirkland Zoning Code (KZC) 90.45(1)). The Watershed Company confirmed this Type 3 rating during their June 5, 2014 site visit. The results of this visit are summarized in a June 9, 2014 review letter addressed to David Barnes with the City of Kirkland.



Figure 1: Aerial view of the subject property.

1.2 PROJECT DESCRIPTION

The applicant proposes to demolish the existing structures on the subject property and construct a 27-lot subdivision with associated infrastructure. As part of the development plan, the applicant is proposing to construct a pedestrian walkway in the outer portion of the wetland buffer, adjacent to lots 19, 25, and 26 and the stormwater detention tract. This will require averaging of the Wetland A buffer as described in KZC 90.60(2)(a). The wetland buffer will be reduced from 50 feet to 38 feet at its narrowest point. This is less than the one-third maximum reduction allowable under KZC 90.60(2)(a)(1). Additional buffer area will be designated adjacent to the existing wetland buffer as part of the buffer width averaging plan.

The proposed plan provides the required 10-foot building setback from the perimeter of the reduced wetland buffer. Stormwater will be routed to a dispersion trench located just outside of the buffer.

2.0 REVIEW OF EXISTING INFORMATION

Prior to conducting the site investigation, public resources were reviewed to gather background information on the subject property and the surrounding area in regards to critical areas. The following information was examined:

2.1 USFWS NATIONAL WETLANDS INVENTORY

The National Wetland Inventory (NWI) does not indicate any wetland areas on the subject property.

2.2 USDA/NRCS WEB SOIL SURVEY

The Natural Resources Conservation Service (NRCS) web soil survey and the 2014 national hydric soil list (for Washington State) were used to identify soil types on the subject property and determine their hydric properties. The subject property is underlain by Alderwood gravelly sandy loam, 6 to 15 percent slopes, Indianola loamy fine sand, 0 to 4 percent slopes, and Everett gravelly sandy loam, 5 to 15 percent slopes. None of these soils are classified as hydric by the Natural Resources Conservation Service. The following table describes the hydric component percentages found in these mapped soil types. The likelihood that a given map unit is a hydric soil is partly based on the percentage of hydric components found in the soil type.

Map Unit Name	Hydric Component	Component Percentage
Alderwood gravelly sandy loam (8-15%)	Shalcar	3
	Norma	2
Everett gravelly sandy loam (5-15%)	None	N/A
Indianola loamy fine sand (0-4%)	None	N/A

Table 1: Soil Units Present in the Project Area

2.3 WDFW SALMONSCAPE INTERACTIVE MAPPING SYSTEM

The SalmonScape interactive map does not show any streams on or near the subject property.

2.4 WDFW PRIORITY HABITAT AND SPECIES (PHS) MAPS

There are no priority habitats or listed species on the subject property per the PHS Interactive Map. The nearest PHS area is a wetland located approximately 1,000 feet to the north and northeast.

2.5 KING COUNTY iMAP INTERACTIVE MAPPING TOOL

The King County iMap does not show any wetlands or streams on the subject property.

2.6 KIRKLAND SENSITIVE AREAS MAP

The Kirkland Sensitive Areas Map illustrates an off-site wetland bordering the subject property to the south and east.

3.0 METHODOLOGY

3.1 LIMIT OF STUDY

The initial August 2013 site visit was constrained to the subject property. Lack of legal access to adjacent parcels prevented WRI staff from performing routine wetland determinations in off-site areas at that time. Access was granted to parcel 3226059151 (east and south of the project site) during the June 2014 site investigation for the purposes of more accurately delineating Wetland A.

3.2 WETLAND DETERMINATION AND DELINEATION

Wetland boundaries were determined using the routine approach described in *the Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers 2010). Under the routine methodology, the process for making a wetland determination is based on three steps:

- 1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
- 2.) Examination of the site for hydric soils;
- 3.) Determining the presence of wetland hydrology

The following criteria must be met in order to make a positive wetland determination:

3.2.1 Vegetation Criteria

The Corps Manual and 2010 Regional Supplement define hydrophytic vegetation as “*the assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence.*” Field indicators are used to determine

whether the hydrophytic vegetation criteria have been met. Examples of these indicators include, but are not limited to, the rapid test for hydrophytic vegetation, a dominance test result of greater than 50%, and/or a prevalence index score less than or equal to 3.0.

3.2.2 Soils Criteria

The 2010 Regional Supplement (per the National Technical Committee for Hydric Soils) defines hydric soils as soils “*that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.*” Field indicators are used to determine whether a given soil meets the definition for hydric soils. Indicators are numerous and include, but are not limited to, presence of a histosol or histic epipedon, a sandy gleyed matrix, depleted matrix, and redoximorphic depressions.

3.2.3 Hydrology Criteria

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively. The strongest indicators include the presence of surface water, a high water table, and/or soil saturation within at least 12 inches of the soil surface.

4.0 WETLAND DETERMINATION

Wetlands identified on the subject property were rated pursuant to the City of Kirkland’s Wetland Field Data Form as required by KZC section 90.40(3)(h). Wetlands were classified according to the U.S. Fish and Wildlife Service (USFWS) Classifications of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979), also known as the Cowardin Classification System, as well as the Hydrogeomorphic (HGM) Classification System (Brinson 1993).

One wetland, referred to as Wetland A for the purposes of this report, was identified on the subject property. This feature is described below.

4.1 WETLAND BOUNDARY DETERMINATION FINDINGS

4.1.1 Wetland A

Cowardin Classification: Palustrine, Forested, Broad-Leaved Deciduous, Seasonally flooded & Saturated

City of Kirkland Wetland Classification: Type 3 Wetland

City of Kirkland Standard Buffer Requirement: 50 feet



Figure 2: Wetland A, looking south.

Wetland A is a slope wetland per the HGM classification system and is located in the right-central portion of the subject property (the southeast corner on parcel 3226059113). It extends off-site to the south and slightly to the east. Based on the Cowardin classification system, Wetland A is a palustrine/forested/broad-leaved deciduous/seasonally flooded & saturated wetland system.

The southern, off-site portion of Wetland A extends westward across the southern parcel. Access to the off-site portion (for the purpose of continuing the wetland delineation) was granted by the current property owner in July 2014. Two data points were established on the off-site property; one in the northwest corner (data point S-5) and another in approximately the north-central portion of the site (point S-6). The soils at data point S-5 exhibited a very dark brown (10YR 2/2) matrix to a depth of 9 inches, a dark yellowish-brown (10YR 3/6) matrix between 9 and 15 inches in depth, and a brown matrix (10YR 4/3) matrix between 15 and 20 inches in depth. Although redoximorphic features were observed in the second and third soil layers, the matrix colors are not representative of typical hydric soils; they do not meet any hydric soil indicators on the 2010 Regional Supplement Wetland Delineation Data Form. Furthermore, the soils were

dry at the time of the delineation and no wetland hydrology indicators were observed (it should be noted, however, that this portion of the wetland was delineated during the summer months). The vegetation at soil log S-5 is dominated by black cottonwood (*Populus balsamifera*), Greene's mountain ash (*Sorbus scopulina*), red alder (*Alnus rubra*), Indian plum (*Oemleria cerasiformis*), trailing blackberry (*Rubus ursinus*), creeping buttercup (*Ranunculus repens*), bluegrass (*Poa* sp.), and herb Robert (*Geranium robertianum*). Although the vegetation in this area meets the hydrophytic vegetation criteria per the 2010 Regional Supplement, the lack of hydric soils and wetland hydrology signify that this area is not a wetland. Data point S-6, however, met all three wetland criteria and, thus, is located within a wetland (the wetland determination data forms for this project can be found in Appendix B of this report). Therefore, the off-site portion of Wetland A does not extend all the way to the northwest property corner of the southern, off-site parcel.

The primary source of hydrology for Wetland A is groundwater and overland flow. Wetland A is located in a geomorphic position that is capable of collecting excess water from precipitation, runoff, groundwater, etc. A dry-season water table was observed at a depth of 14" below the soil surface during the August 2013 site inspection and soils were saturated to the surface in the off-site portion of Wetland A during the July 2014 site investigation. Small areas of surface water were also observed during the July 2014 site investigation. These characteristics meet wetland hydrology indicators A1, A3, C2 and D2 on the 2010 Regional Supplement Wetland Delineation Data Form. A non-jurisdictional watercourse/drainage channel is located in the southeast corner of Wetland A. This ditch originates off-site to the east, flows through the wetland, and continues south through the off-site portion of the wetland. It exits the southern, off-site parcel and continues to flow south and eventually to the west. A second non-jurisdictional watercourse flows in an easterly direction through parcel 3226059083, eventually connecting to the north-south oriented watercourse on the off-site parcel. The non-jurisdiction status of these watercourses has been confirmed in the June 9, 2014 review letter prepared by The Watershed Company.

Vegetation within Wetland A is comprised of deciduous forested and scrub-shrub species as well as herbaceous vegetation. Dominant species observed at data point S-1 include red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), salmonberry (*Rubus spectabilis*), trailing blackberry (*Rubus ursinus*), lady fern (*Athyrium filix-femina*), giant horsetail (*Equisetum telmateia*), and sword fern (*Polystichum munitum*). Dominant species observed at data point S-6 (off-site wetland area) include black cottonwood (shrub layer), creeping buttercup (*Ranunculus repens*), bluegrass (*Poa* sp.), and common velvetgrass (*Holcus lanatus*). More than 50% of the dominant species within Wetland A have an indicator status of facultative (FAC) or wetter, which meets the hydrophytic vegetation criteria per the Corps Manual and the 2010 Regional Supplement.

Soils within Wetland A (at data point S-1) are black (10YR 2/1) clay loam to a depth of 11 inches, dark grayish brown (10YR 4/2) between 11 and 18 inches in depth, and pale brown (10YR 6/3) between 18 and 20 inches in depth. Distinct redoximorphic (redox) features were observed in the second soil layer; this meets the criteria for a "depleted below dark surface," or hydric soil indicator A11 on the 2010 Regional Supplement Wetland Delineation Data Form. The soil at data point S-6 (off-site wetland area) is black (10YR 2/1) silty clay loam to a depth of 12 inches and grayish brown (10YR 5/2) silty clay loam between 12 and 20 inches in depth. Distinct redoximorphic features were observed in the upper soil layer while prominent

redox features were observed in the bottom soil layer. The soil at data point S-6 meets hydric soils indicators F6 (“redox dark surface”) and A11 on the delineation data form.

Wetland A received an overall score of 19 points on the City of Kirkland Wetland Field Data Form. This equates to a Type 3 wetland rating. Per KZC 90.45, the buffer for a Type 3 wetland located in a primary drainage basin is 50 feet (the Forbes Creek Drainage Basin is considered a primary basin per the City of Kirkland Sensitive Areas Map). In addition, a 10-foot structure setback is required from the edge of the wetland buffer.

No nesting, denning, or breeding areas were observed in Wetland A or the surrounding area during the site investigation. The wetland and surrounding buffer is most likely utilized by various songbirds, small mammals, common amphibians and reptiles, and species suited to life in urban/suburban settings.

5.0 PROPOSED DEVELOPMENT ACTIVITIES

The project applicant is proposing to construct a 27-lot subdivision on the subject property, which will include internal roadways and a stormwater management system. As part of the project, the applicant is proposing to construct a pedestrian walkway adjacent to lots 19, 25, and 26 and the stormwater detention tract. A short spur trail will also border the stormwater detention tract to the south.

Part of the trail, as well as the southeast corner of the stormwater detention tract, will extend into portions of the outer wetland buffer. Therefore, buffer width averaging will be employed to balance out these impacts and provide new buffer area. In addition, construction of the northern access road will require grading in the northern portion of the wetland buffer as well as in one of the proposed buffer averaging areas. These temporarily disturbed areas will be restored with native trees and shrubs upon completion of grading activities. Finally, a level spreader will be installed east of the stormwater detention tract and will extend into the existing wetland buffer.

6.0 BUFFER MODIFICATION AND BUFFER RESTORATION

To accommodate the proposed development, the applicant is planning to employ buffer width averaging per KZC 90.60(2)(a)(1) and is also planning to restore the temporarily impacted buffer areas with native vegetation. The proposed trail and southeast corner of the stormwater detention tract will impact 2,312 square feet (SF) of wetland buffer. New buffer area totaling 2,370 SF will be designated to the north and west of the wetland. Per KZC 90.60(2)(a)(1), buffers may not be reduced by more than 1/3 of the standard buffer width. For a 50-foot buffer, this equates to a 16.7-foot reduction down to 33.3 feet. The buffer of Wetland A will measure 38 feet in width at its narrowest point (adjacent to lots 25 and 26), which thereby complies with the Kirkland Zoning Code.

6.1 KIRKLAND ZONING CODE BUFFER MODIFICATION REQUIREMENTS

Per KZC 90.60(2)(b), a request for buffer width averaging shall be approved only if specific requirements are met. The requirements are listed below in italics with project-specific responses following each one.

An improvement or land surface modification shall be approved in a wetland buffer only if:

1) It is consistent with Kirkland's Streams, Wetlands and Wildlife Study (The Watershed Company, 1998) and the Kirkland Sensitive Areas Regulatory Recommendations Report (Adolfson Associates, Inc., 1998);

The objective of Kirkland's Streams, Wetlands and Wildlife Study is to “provide the foundation for development of policies, regulations and incentives that will maintain, and to the degree possible, improve the quality of Kirkland's streams, wetlands and natural areas.” The Study provides a list of opportunities for enhancement and restoration of critical areas within the Forbes Creek Basin. Two of the wetland-specific opportunities that the proposed project/mitigation will address include:

- Establishment of vegetated buffers wherever possible along wetlands surrounded by developed areas.
- Removal of garbage and invasive vegetation from even the smallest wetlands; establishment of native buffer vegetation to provide an improvement for screening, water quality, and wildlife habitat.

The existing buffer for Wetland A is primarily vegetated with dense, native trees and shrubs. It is located in a residential area that contains several nearby developed parcels. With the exception of the small buffer impact areas, the wetland buffer will be maintained, and designation of new buffer areas will retain the size (square footage) of the buffer.

The Kirkland Sensitive Areas Regulatory Recommendations Report outlines recommendations for buffer width reductions adjacent to streams and wetlands. The Report recommends that stream buffer modification only be allowed if buffer averaging or buffer enhancement is proposed. It states, “*Similar to the stream buffer modification recommendations, we recommend that modification of wetland buffers not exceed one-third of the buffer width, regardless of the basin designation, as long as buffer enhancement or averaging is provided.*” The Report also recommends that a 10-foot building setback be required from both modified and standard buffers. The proposed project is in compliance with these recommendations.

2) It will not adversely affect water quality;

Although a portion of the wetland buffer will be slightly reduced, the remainder of the buffer will maintain the 50-foot width. Furthermore, the designation of new buffer area will compensate for the reduced areas. The northern, temporarily impacted portion of the buffer will be restored with native vegetation following grading activities. Maintenance of the majority of the existing buffer and restoration of the northern portion will maintain the water quality functions of the buffer and wetlands.

3) *It will not adversely affect fish, wildlife, or their habitat;*

There is no fish habitat within the immediate project area, so fish and fish habitat will not be affected. Wildlife habitat will be maintained by the proposed buffer width averaging and buffer restoration.

4) *It will not have an adverse effect on drainage and/or storm water detention capabilities;*

The overall size (square footage) of the buffer will not be reduced, and the wetland itself will not be impacted by the proposed project. Any drainage and/or stormwater detention capabilities that the wetland and buffer provide will be maintained. Furthermore, a stormwater management system will serve the proposed 27-lot development.

5) *It will not lead to unstable earth conditions or create an erosion hazard;*

The proposed project and mitigation measures will not result in unstable earth conditions or create erosion hazards. The project site slopes gently to the southeast and no steep slopes or erosion hazard areas are present on-site. Buffer width averaging and buffer restoration will not create any hazards. Although some grading is proposed for the northern portion of the wetland buffer, it is a relatively small area that will be restored with native vegetation. Standard best management practices (BMP's) will be employed to address graded areas and bare earth areas.

6) *It will not be materially detrimental to any other property or the City as a whole;*

The proposed project and mitigation plan will be contained entirely on the subject property. Similar developments as well as single-family parcels surround the project site on all sides. The proposal is similar in nature to the surrounding land uses and will not negatively affect the City of Kirkland or other properties. Maintaining and protecting the critical areas will actually be beneficial to the surrounding area.

7) *Fill material does not contain organic or inorganic material that would be detrimental to water quality or to fish, wildlife, or their habitat;*

Any fill material placed on-site will not contain materials detrimental to water quality or fish and wildlife habitat.

8) *All exposed areas are stabilized with vegetation normally associated with native wetland buffers, as appropriate; and*

Exposed buffer areas will be re-vegetated with native trees and shrubs. A wood chip mulch will also be applied to buffer planting areas.

9) *There is no practicable or feasible alternative development proposal that results in less impact to the buffer.*

The proposed development has been designed to avoid and minimize impacts to the wetland and buffer to the maximum extent practicable. The stormwater detention vault, which extends

slightly into the buffer, is necessary to serve the development by managing stormwater and runoff. The trail will provide recreation opportunities for the inhabitants of the development. The proposed design represents the most efficient use of the subject property and provides adequate protection of the critical area and buffer. There are currently no other alternative proposals that will meet the goals of the project and provide greater critical area and buffer protection. The proposed buffer modification will maintain the overall size/area of the buffer and restore temporarily impacted areas.

6.2 LEVEL SPREADER

Per KZC 90.45(3), surface discharge of stormwater through a wetland buffer and buffer setback is required unless a piped system is approved by the City. A level spreader will be placed in the northern portion of the wetland buffer, immediately north of Wetland A. This stormwater discharge system will originate at the northeast corner of the detention vault and extend south into the buffer. The level spreader will allow for stormwater to dissipate into the buffer and wetland without causing erosion or scour.

6.3 BUFFER RESTORATION

Construction of the northern access road for the development will require grading within the northernmost portion of the existing wetland buffer. Approximately 625 SF of existing buffer will be temporarily impacted by grading activities. In addition, approximately 1,131 SF of new designated buffer will also be temporarily impacted by the grading activities. These areas will be restored with native vegetation upon completion of grading activities. Table 2 lists the species that will be installed in the restoration area.

Table 2: Buffer Restoration Planting Plan (Approx. 1,756 square feet)

<u>Species</u>	<u>Latin Name</u>	<u>Size</u>	<u>Spacing</u>	<u>Quantity</u>
Douglas fir	<i>Pseudotsuga menziesii</i>	1 gallon	10'	6
Big leaf maple	<i>Acer macrophyllum</i>	1 gallon	10'	6
Western red Cedar	<i>Thuja plicata</i>	1 gallon	10'	6
Thimbleberry	<i>Rubus parviflorus</i>	1 gallon	5'	13
Beaked hazelnut	<i>Corylus cornuta</i>	1 gallon	5'	13
Snowberry	<i>Symphoricarpos albus</i>	1 gallon	5'	13
Vine maple	<i>Acer circinatum</i>	1 gallon	5'	13
Sword fern	<i>Polystichum munitum</i>	1 gallon	3'	125

6.3.1 Project Notes

Pre-construction Meeting

Monitoring by the lead biologist for all portions of this project is strongly recommended. An on-site, pre-construction meeting will be held between the lead biologist, project applicant, and City of Kirkland personnel. The objective of such a meeting is to discuss project sequencing, confirm the location of the mitigation areas, and verify the mitigation actions.

Inspections

The lead biologist will periodically inspect the mitigation installation process. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or unknown site conditions. A City of Kirkland representative and/or the lead biologist will make these decisions during construction.

6.3.2 Planting Notes

Planting Schedule

If possible, plant installation will take place in late fall or early spring (prior to the start of the growing season). Plants shall be obtained from a reputable nursery familiar with native vegetation and that is capable of providing local genetic stock. Limited species substitution may be allowed. City of Kirkland personnel shall approve modifications proposed by the lead biologist in regards to species substitution, spacing, plant locations, etc. BEFORE these modifications are implemented on-site.

Handling

Plants shall be handled so as to avoid damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species requirements. Plants shall not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation.

Storage

Plants stored for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to specific species requirements. Plants must be re-inspected by the lead biologist prior to installation.

Damaged plants

Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Plant Names

Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the lead biologist. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition

Plants shall be normal in pattern of growth, healthy, well branched, and vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected.

Roots

All plants shall be containerized unless explicitly authorized by the lead biologist. Root bound plants or B&B plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (e.g. broken and/or twisted roots) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened and the sides of the root ball must be roughened.

Sizes

Plant sizes are indicated in Table 2, above. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Any changes to the original mitigation design must be approved by the lead biologist and the City of Kirkland. Measurements, caliper, branching, and balling-and-burlapping shall conform to industry standards.

Form

Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well branched.

Weeding

Non-native and invasive vegetation in the mitigation areas will be hand weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is allowed without the approval of the City of Kirkland.

Site conditions

The contractor shall immediately notify the lead biologist of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations should not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Planting Pits

Planting pits should be circular with vertical sides, and should be 6" deeper and 12" larger in diameter than the root ball of the plant. In compacted soils, the sides of the planting pits should be scarified/broken up. Set plants upright in pits. Burlap, if used, shall be removed from the planting pits. Backfill shall be worked back into holes such that air pockets are removed without compacting the soils.

Water

Plants should be watered midway through backfilling, and again upon completion of backfilling. For spring plantings (if approved), a rim of earth should be mounded around the base of the tree or shrub no closer than the drip line, or no less than 30" in diameter, except on steep slopes or in

hollows. Plants should be watered a second time within 24-48 hours after installation. The earthen rim/dam should be leveled prior to the second growing season.

Irrigation shall be provided during the first two years of the monitoring period and will occur during the summer/dry season (e.g. June through September), any extensive dry periods, and/or as determined by the lead biologist. Special attention should be paid to sword ferns, which require ample soil moisture to survive transplanting, particularly if shade is not available. Water shall be applied to the new plants at a rate of one (1) inch per week. The irrigation system shall be installed by an experienced landscaper.

Staking

Most shrubs and trees do not require staking. If the plant can stand upright without staking in a moderate wind, stakes should not be used. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, stakes should be removed. All stakes must be removed within two (2) years of installation.

Plant Location

Lath staking, brightly colored flagging, or another form of marking shall be placed on or near each installed plant to assist in locating the plants during maintenance and monitoring activities.

Arrangement and Spacing

The plants shall be arranged with the appropriate numbers, sizes, species, and distribution to achieve the required vegetation coverage. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area.

Inspection(s)

The lead biologist shall be present on site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction. City of Kirkland personnel shall approve modifications proposed by the lead biologist in regards to species substitution, spacing, plant locations, etc. BEFORE these modifications are implemented on-site.

Mulch

A wood chip mulch (containing some green/vegetative material) will be placed around the base of each plant in a 3-foot radius and at a depth of 2 to 4 inches. Mulch shall not be allowed to contact plant stems in order to avoid plant decay and rot.

6.4 FENCING

Section 90.50 of the KZC requires temporary construction phase fencing be installed along the upland boundary of the wetland buffer. Silt screen fabric must also be installed. The construction fencing shall remain in place for the duration of the development activities. Upon

completion of the project, a 3 to 4-foot tall split rail fence shall be installed between the upland boundary of the wetland buffer and the developed portion of the site.

7.0 GOALS, OBJECTIVES, AND PERFORMANCE STANDARDS

Project goals identify what the mitigation plan is attempting to accomplish. Objectives identify specific actions that are taken or components that are initiated in order to meet the project goals. Finally, performance standards provide measurable criteria for determining if the goals and objectives are being achieved (WA. State Department of Ecology et al., 2006)

7.1 GOALS

The goals of this mitigation plan include the following:

- Implementation of buffer width averaging to compensate for 2,312 SF of buffer alteration.
- Restoration of approximately 1,756 SF of wetland buffer temporarily impacted by grading activities.
- Protection of on-site critical areas.

7.2 OBJECTIVES

The goals will be met by performing the following actions (i.e. objectives):

- Designating approximately 2,370 SF of new buffer as part of buffer width averaging.
- Installing 18 native trees, 52 native shrubs, and 125 native ferns throughout the buffer restoration area (i.e. the temporarily impacted grading area).
- Installing a split-rail fence between the upland boundary of the wetland buffer and the developed portion of the site.

7.3 PERFORMANCE STANDARDS

The performance standards for the buffer restoration area include the following:

- Survival of planted trees, shrubs, and herbaceous vegetation throughout the restoration area will be 100% following the first year of monitoring; 80% following the third year; and 70% by the end of the fifth year. All dead plants shall be replaced following the first year of monitoring.
- Tree and shrub aerial coverage throughout the restoration areas will be 50% at the end of the third monitoring year and 70% at the end of the fifth monitoring year. (Note: desirable native volunteer species may contribute up to 20% cover. If volunteer species exceed 20% cover, control measures shall be initiated in an effort to maintain species diversity).
- Herbaceous species aerial coverage throughout the restoration areas will be 25% at the

end of the third year of monitoring and 50% at the end of the fifth year.

- Invasive and non-native species shall not provide more than 15% aerial coverage within any of the restoration areas at any time.

8.0 MONITORING

A five-year monitoring plan will begin with the preparation of an as-built report following mitigation installation. This report will outline what occurred on the project site during construction and identify if any changes were made to the approved mitigation plan. Following submittal of the as-built plan, monitoring visits will occur. Monitoring will begin the first year following mitigation installation. Monitoring visits will occur twice yearly (once in the spring, once in the fall) and will continue for five years.

Monitoring techniques will include general visual observations to assess tree and shrub survivability and coverage. In addition, transects and quadrats may be used to assess plant survivability and aerial coverage. Specific monitoring techniques will be discussed in the first monitoring report.

Monitoring reports will be prepared and submitted to the City of Kirkland at the end of each monitoring year. The reports will summarize the overall conditions of the mitigation areas and discuss whether the performance standards are being met. Photos of the mitigation areas will also be provided. On year 5, the final monitoring report will be prepared and will determine if the mitigation plan has been successful per the established goals, objectives, and performance standards. If the mitigation plan is deemed unsuccessful, contingency actions will be utilized and/or the monitoring period may be extended.

9.0 MAINTENANCE

Periodic maintenance will be performed within the restoration area. Maintenance actions may include, but are not limited to, replacement of dead vegetation, removal of invasive and non-native vegetation, trash cleanup, and repair of damaged fencing. Maintenance needs will be discussed in the annual monitoring reports. Completed maintenance tasks and maintenance that needs to be done will be addressed in each monitoring report.

10.0 CONTINGENCY

If, during any of the monitoring visits, 20% of the plants within any restoration area, or in any particular stratum within a restoration area, are severely stressed, or it appears that 20% may not survive, additional plants will be added to the mitigation areas. If invasive and non-native species exceed 15% aerial coverage within any of the restoration areas at any time, control measures will be initiated. Additional contingency actions may include, but will not be limited to, more aggressive weed control, additional mulching, species substitution, soil amendments, and/or additional irrigation. If necessary, a meeting between the lead biologist and City of Kirkland personnel will be held to develop new contingency actions.

11.0 BONDING

Pursuant to requirements set forth in KZC 90.145, a performance bond is required to ensure compliance with chapter 90 of the KZC. The amount of the bond shall be 125% of the cost of the mitigation plan, including plant materials and installation, monitoring, and maintenance. The City of Kirkland shall release this bond at the end of five years, only upon successful determination for all portions of this mitigation project.

The following is a cost estimate for plant materials, labor, monitoring, and maintenance for the mitigation included herein. This does not represent an actual bid (please note: plant prices include labor and installation):

Plants – \$9.50/plant:	\$1,825.50
Estimated cost of monitoring (\$1,200 1st year; \$900 remaining 4 years):	\$4,800.00
Estimated cost of maintenance – 5 years @ \$250/year:	\$1,250.00
Total:	\$7875.50
Performance Bond Amount:	\$9,844.38

12.0 USE OF THIS REPORT

This Critical Area Study and Buffer Modification Plan is supplied to Larry Scrivanich as a means of determining on-site wetland conditions, and as a means of implementing mitigation actions for a development proposal as required by the City of Kirkland. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands and streams are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

This report conforms to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.

A handwritten signature in black ink, appearing to read 'Jim Rothwell', with a stylized flourish at the end.

Jim Rothwell, PWS
Senior Ecologist
Wetland Resources, Inc.

13.0 REFERENCES

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Appendix A

Wetland Rating Form

Plate 26 WETLAND FIELD DATA FORM

(Note: Applicable to Chapter 90 KZC, but not Chapter 83 KZC)



WETLAND FIELD DATA FORM

BEGIN BY CHECKING ANY OF THE FOLLOWING (a. – e.) THAT APPLY:

- a. The wetland is contiguous to Lake Washington;
- b. The wetland contains at least 1/4 acre of organic soils, such as peat bogs or mucky soils;
- c. The wetland is equal to or greater than 10 acres in size and having three or more wetland classes, as defined by the U.S. Fish & Wildlife Service (Cowardin et al., 1979), one of which is open water;
- d. The wetland has significant habitat value to state or federally listed threatened or endangered wildlife species; or
- e. The wetland contains state or federally listed threatened or endangered plant species.

IF ANY OF THE CRITERIA LISTED ABOVE ARE MET, THEN THE WETLAND IS CONSIDERED TO BE TYPE 1. IF THAT IS THE CASE, PLEASE CONTINUE TO COMPLETE THE ENTIRE FORM, BUT DO NOT ASSIGN POINTS.

IF THE WETLAND DOES NOT MEET THE CRITERIA LISTED ABOVE FOR TYPE 1, COMPLETE THE ENTIRE FORM, USING THE ASSIGNED POINTS TO DETERMINE IF IT IS A TYPE 2 OR TYPE 3 WETLAND.

Type 2 wetlands typically have at least two wetland vegetation classes, are at least partially surrounded by buffers of native vegetation, connected by surface water flow (perennial or intermittent) to other wetlands or streams, and contain or are associated with forested habitat.

1. Total wetland area

Estimate wetland area and score from choices	<u>Acres</u>		<u>Point Value</u>	<u>Points</u>
	>20.00	=	6	
	10-19.99	=	5	
	5-9.99	=	4	
	1-4.99	=	3	
	0.1-0.99	=	2	2
	<0.1	=	1	

2. Wetland classes: Determine the number of wetland classes that qualify, and score according to the table.

	# of Classes		Points
Open Water: if the area of open water is >1/3 acre or >10% of the total wetland area	1	=	1
Aquatic Beds: if the area of aquatic beds is >10% of the open water area or >1/2 acre	2	=	3
Emergent: if the area of emergent class is >1/2 acre or >10% of the total wetland area	3	=	5
Scrub-Shrub: if the area of scrub-shrub class is >1/2 acre or >10% of the total wetland area	4	=	7
Forested: if the area of forested class is >1/2 acre or >10% of the total wetland area	5	=	10

3. Plant species diversity.

For all wetland classes which qualified in 2 above, count the number of different plant species and score according to the table below. You do not have to name them.

e.g., if a wetland has an aquatic bed class with 3 species, and emergent class with 4 species and a scrub-shrub class with 2 species, you would circle 2, 2, and 1 in the second column (below).

Class	# of Species	Point Value	Class	# of Species	Point Value
Aquatic Bed	1-2	= 1	Scrub-Shrub	1-2	= 1
	3	= 2		3-4	= 2
	>3	= 3		>4	= 3
Emergent	1-2	= 1	Forested	1-2	= 1
	3-4	= 2		3-4	= 2
	>4	= 3		>4	= 3

4. Structural diversity.

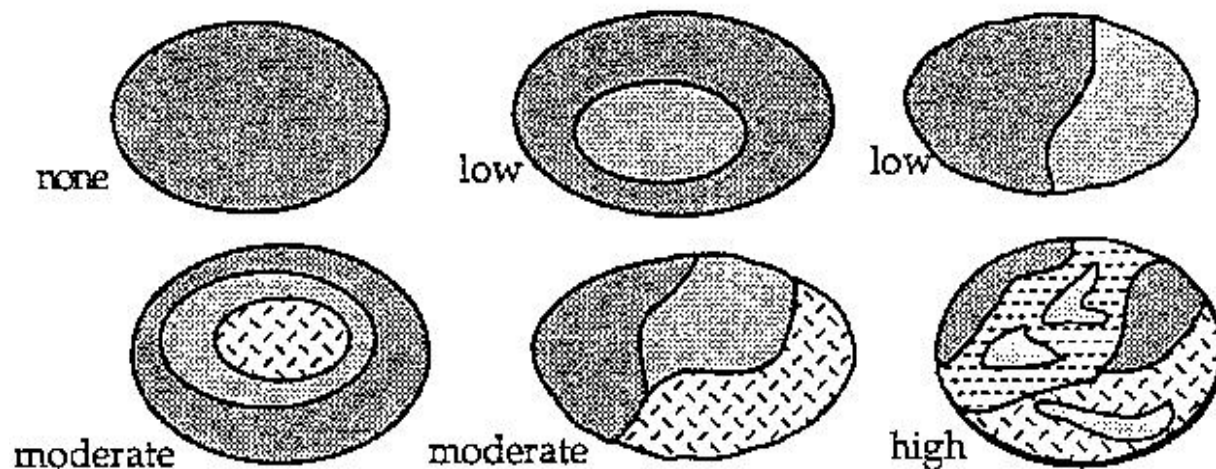
If the wetland has a forested class, add 1 point for each of the following attributes present:

Trees >50' tall	=	1
Trees 20' to 49' tall	=	1
Shrubs	=	1
Herbaceous ground cover	=	1

5. Interspersion between wetland classes.

Decide from the diagrams below whether interspersion between wetland classes is high, moderate, low or none

- 3 = High
2 = Moderate
1 = Low
0 = None



6. Habitat features

Add points associated with each habitat feature listed:

Is there evidence of current use by beavers?

= 3

Is a heron rookery located within 300'?

= 2

Are raptor nest(s) located within 300'?

= 1

Are there at least 2 standing dead trees (snags) per acre?

= 1

Are there any other perches (wires, poles, or posts)?

= **1**

Are there at least 3 downed logs per acre?

= 1

= **1**

7. Connection to streams

Is the wetland connected at any time of the year via surface water? (score one answer only)

To a perennial stream or a seasonal stream *with* fish

= 5

To a seasonal stream *without* fish

= 3

Is not connected to any stream

= **0**

8. Buffers

Step 1: Estimate (to the nearest 5%) the percentage of each buffer or land-use type (below) that adjoins the wetland boundary. Then multiply these percentages by the factor(s) below and enter result in the column to the right.

	% of Buffer	Step 1	Width Factor	Step 2
Roads, buildings or parking lots	20% X 0 =	0	=	0
Lawn, grazed pasture, vineyards or annual crops	35% X 1 =	35	=	70
Ungrazed grassland or orchards	% X 2 =		=	
Open water or native grasslands	% X 3 =		=	
Forest or shrub	45% X 4 =	180	=	360
Add buffer total:				430

Step 2: Multiply result(s) of step 1:
By 1 if buffer width is 25-50'
By 2 if buffer width is 50-100'
By 3 if buffer width is >100'

Enter results and add sub-scores

Step 3: Score points according to the following table:

Buffer Total

900-1200 = 4

600-899 = 3

300-599 = 2

100-299 = 1

9. Connection to other habitat areas:

Is there a riparian corridor to other wetlands within 0.25 of a mile, or a corridor >100' wide with good forest or shrub cover to any other habitat area? = 5

Is there a narrow corridor <100' wide with good cover or a wide corridor >100' wide with low cover to any other habitat area? = 3

Is there a narrow corridor <100' wide with low cover or a significant habitat area within 0.25 mile but no corridor? = **1**

Is the wetland and buffer completely isolated by development and/or cultivated agricultural land? = 0

10. Scoring

Add the scores to get a total: **19**

Question: Is the total greater than or equal to 22 points?

Answer:

Yes = Type 2 **No = Type 3**

Appendix B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13
 Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-1
 Investigator(s): JR Section, Township, Range: S32, T26N, R05E
 Landform (hillslope, terrace, etc.): Flat area Local relief (concave, convex, none): _____ Slope (%): NA
 Subregion (LRR): LRR-A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.5%</u> (A/B)
1. <u>Alnus rubra</u>	<u>45%</u>	<u>Yes</u>	<u>FAC</u>	
2. <u>Populus balsamifera</u>	<u>20%</u>	<u>Yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
<u>65%</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: 30') 1. <u>Rubus spectabilis</u> <u>50%</u> <u>Yes</u> <u>FAC</u> 2. <u>Rubus armeniacus</u> <u>15%</u> <u>Yes</u> <u>FACU</u> 3. _____ 4. _____ 5. _____				
<u>65%</u> = Total Cover				
Herb Stratum (Plot size: 10') 1. <u>Athyrium filix-femina</u> <u>10%</u> <u>Yes</u> <u>FAC</u> 2. <u>Polystichum munitum</u> <u>5%</u> <u>Yes</u> <u>FACU</u> 3. <u>Equisetum telmateia</u> <u>5%</u> <u>Yes</u> <u>FACW</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
<u>20%</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: 10') 1. <u>Rubus ursinus</u> <u>20%</u> <u>Yes</u> <u>FACU</u> 2. _____				
<u>20%</u> = Total Cover				
% Bare Ground in Herb Stratum <u>80%</u>				
Remarks:				

SOIL

Sampling Point: S-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-11	10YR 2/1	98%	7.5YR 2.5/2	2%	C	M	Clay Loam	
11-18	10YR 4/2	97%	7.5 YR 3/4	1%	C	PL	Sandy Loam	
			10 YR 4/4	2%	C	M		
18-20	10YR 6/3	93%	10YR 5/6	7%	C	M	Silty Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	Secondary Indicators (2 or more required) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 14 inches Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13
 Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-2
 Investigator(s): JR Section, Township, Range: S32, T26N, R05E
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): _____ Slope (%): <1%
 Subregion (LRR): LRR-A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam, 6 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: <u>30'</u>)</p> <table style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u>Alnus rubra</u></td><td style="text-align: center;">30%</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. <u>Populus balsamifera</u></td><td style="text-align: center;">15%</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>3. <u>Frangula purshiana</u></td><td style="text-align: center;">5%</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>4. <u>Prunus Emarginata</u></td><td style="text-align: center;">5%</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td colspan="4" style="text-align: right;">55% = Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: <u>30'</u>)</p> <table style="width: 100%;"> <tbody> <tr><td>1. <u>Rubus spectabilis</u></td><td style="text-align: center;">60%</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. <u>Rubus armeniacus</u></td><td style="text-align: center;">20%</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>3. <u>Crataegus sp.</u></td><td style="text-align: center;">10%</td><td style="text-align: center;">No</td><td style="text-align: center;">FAC</td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">90% = Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum</u> (Plot size: <u>10'</u>)</p> <table style="width: 100%;"> <tbody> <tr><td>1. <u>Polystichum munitum</u></td><td style="text-align: center;">5%</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. <u>Athyrium filix-femina</u></td><td style="text-align: center;">5%</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td></tr> <tr><td>8. _____</td><td></td><td></td><td></td></tr> <tr><td>9. _____</td><td></td><td></td><td></td></tr> <tr><td>10. _____</td><td></td><td></td><td></td></tr> <tr><td>11. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">10% = Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum</u> (Plot size: _____)</p> <table style="width: 100%;"> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum <u>90%</u></p>		Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Alnus rubra</u>	30%	Yes	FAC	2. <u>Populus balsamifera</u>	15%	Yes	FAC	3. <u>Frangula purshiana</u>	5%	No	FAC	4. <u>Prunus Emarginata</u>	5%	No	FACU	55% = Total Cover				1. <u>Rubus spectabilis</u>	60%	Yes	FAC	2. <u>Rubus armeniacus</u>	20%	Yes	FACU	3. <u>Crataegus sp.</u>	10%	No	FAC	4. _____				5. _____				90% = Total Cover				1. <u>Polystichum munitum</u>	5%	Yes	FACU	2. <u>Athyrium filix-femina</u>	5%	Yes	FAC	3. _____				4. _____				5. _____				6. _____				7. _____				8. _____				9. _____				10. _____				11. _____				10% = Total Cover				1. _____				2. _____				_____ = Total Cover				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>6</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>0</u></td><td>x 3 = <u>0</u></td></tr> <tr><td>FACU species <u>0</u></td><td>x 4 = <u>0</u></td></tr> <tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr> <tr><td>Column Totals: <u>0</u> (A)</td><td><u>0</u> (B)</td></tr> </tbody> </table> <p style="text-align: center;">Prevalence Index = B/A = _____</p> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input checked="" type="checkbox"/> Dominance Test is >50%</p> <p><input type="checkbox"/> Prevalence Index is ≤3.0¹</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Wetland Non-Vascular Plants¹</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>0</u> (A)	<u>0</u> (B)
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SOIL

Sampling Point: S-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-9	10YR 2/1						Sa. Cl. Loam	
9-16	2.5YR 5/3		10YR 4/6	3%	C	M	Sa. Cl. Loam	
16-20	10YR 6/2		7.5 YR 4/6	7%	C	M	Clay	Possible restrictive layer.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: Clay Depth (inches): Starting at 16"	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 13 inches Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13
 Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-3
 Investigator(s): JR Section, Township, Range: S32, T26N, R05E
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): _____ Slope (%): 1%
 Subregion (LRR): LRR-A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam, 6 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>12.5%</u> (A/B)
1. <u>Prunus Emarginata</u>	<u>15%</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Populus balsamifera</u>	<u>15%</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Pseudotsuga menzesii</u>	<u>10%</u>	<u>Yes</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
			<u>40%</u> = Total Cover	
Sapling/Shrub Stratum (Plot size: 30')				
1. <u>Corylus cornuta</u>	<u>20%</u>	<u>Yes</u>	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>27%</u> x 3 = <u>81</u> FACU species <u>105%</u> x 4 = <u>420</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>132</u> (A) <u>501</u> (B) Prevalence Index = B/A = <u>3.80</u>
2. <u>Oemleria cerasiformus</u>	<u>10%</u>	<u>No</u>	<u>FACU</u>	
3. <u>Rubus armeniacus</u>	<u>20%</u>	<u>Yes</u>	<u>FACU</u>	
4. <u>Lonicera involucrata</u>	<u>10%</u>	<u>No</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
			<u>60%</u> = Total Cover	
Herb Stratum (Plot size: 10')				
1. <u>Polystichum munitum</u>	<u>10%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Athyrium filix-femina</u>	<u>2%</u>	<u>No</u>	<u>FAC</u>	
3. <u>Geranium robertianum</u>	<u>15%</u>	<u>Yes</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
			<u>27%</u> = Total Cover	
Woody Vine Stratum (Plot size: 10')				
1. <u>Rubus ursinus</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
			_____ = Total Cover	
% Bare Ground in Herb Stratum <u>73%</u>				
Remarks:				

SOIL

Sampling Point: S-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-7	10YR 2/2	100%					Sa. Cl. Loam	
7-18	7.5YR 3/4	97%	7.5YR 4/6	3%	C	M	Sa. Cl. Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)			
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)			Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 8/26/13
 Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-4
 Investigator(s): JR Section, Township, Range: S32, T26N, R05E
 Landform (hillslope, terrace, etc.): Flat area Local relief (concave, convex, none): _____ Slope (%): NA
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam, 6 to 15 percent slopes NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: 30')																		
1. <u>Pseudotsuga menziesii</u>	<u>75%</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>75%</u>		= Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5%</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>170%</u></td> <td>x 4 = <u>680</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>175</u> (A)</td> <td><u>695</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.97</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5%</u>	x 3 = <u>15</u>	FACU species <u>170%</u>	x 4 = <u>680</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>175</u> (A)	<u>695</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>5%</u>	x 3 = <u>15</u>																	
FACU species <u>170%</u>	x 4 = <u>680</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>175</u> (A)	<u>695</u> (B)																	
Sapling/Shrub Stratum (Plot size: 30')																		
1. <u>Mahonia nervosa</u>	<u>10%</u>	<u>Yes</u>	<u>FACU</u>															
2. <u>Acer circinatum</u>	<u>5%</u>	<u>Yes</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>15%</u>		= Total Cover																
Herb Stratum (Plot size: 10')																		
1. <u>Geranium robertianum</u>	<u>80%</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>80%</u>		= Total Cover																
Woody Vine Stratum (Plot size: 10')																		
1. <u>Rubus ursinus</u>	<u>5%</u>	<u>Yes</u>	<u>FACU</u>															
2. _____	_____	_____	_____															
<u>5%</u>		= Total Cover																
% Bare Ground in Herb Stratum <u>20%</u>																		
Remarks:																		

SOIL

Sampling Point: S-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-5	10YR 3/2	100%					Loam	
5-17	2.5Y 4/3	99%	10YR 3/6	1%	C	M	Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks: _____

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)			

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____

Remarks: _____

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 7/31/14
 Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-5
 Investigator(s): JR Section, Township, Range: S32, T26N, R05E
 Landform (hillslope, terrace, etc.): Flat area Local relief (concave, convex, none): Concave Slope (%): NA
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.5</u> (A/B)
1. <u>Populus balsamifera</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	<u>40%</u>	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>145</u> x 3 = <u>435</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>195</u> (A) <u>635</u> (B) Prevalence Index = B/A = <u>3.25</u>
Sapling/Shrub Stratum (Plot size: 20')				
1. <u>Sorbus scopulina</u>	<u>25%</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Alnus rubra</u>	<u>10%</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Oemleria cerasiformis</u>	<u>15%</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. <u>Rubus ursinus</u>	<u>10%</u>	<u>Y</u>	<u>FACU</u>	
5. <u>Crataegus sp.</u>	<u>2%</u>	_____	_____	
<u>62%</u> = Total Cover				
Herb Stratum (Plot size: 10')				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. <u>Ranunculus repens</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Poa sp.</u>	<u>40%</u>	<u>Y</u>	_____	
3. <u>Geranium robertianum</u>	<u>10%</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Taraxacum officinale</u>	<u>5%</u>	_____	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
5. <u>Mycelis muralis</u>	<u>5%</u>	_____	<u>NA</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>100%</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
% Bare Ground in Herb Stratum _____				
Remarks:				
Traces of snowberry (Symphoricarpos albus), and orchard grass (Dactylis glomerata) also observed.				

SOIL

Sampling Point: S-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-9	10YR 2/2	100%					Loam	
9-15	10YR 3/6	96%	10YR 4/2	2%	C	M	Sa. Loam	
			5YR 3/4	2%	C	M		
15-20	10YR 4/3	90%	10YR 3/6	10%	C	M	Sa. Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 7/31/14
 Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-6
 Investigator(s): JR Section, Township, Range: S32, T26N, R05E
 Landform (hillslope, terrace, etc.): Flat area Local relief (concave, convex, none): Concave Slope (%): NA
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
_____ = Total Cover			
Sapling/Shrub Stratum (Plot size: 30')			
1. <u>Populus balsamifera</u>	<u>15%</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
<u>15%</u> = Total Cover			
Herb Stratum (Plot size: 10')			
1. <u>Ranunculus repens</u>	<u>60%</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Poa sp.</u>	<u>60%</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Holcus lanatus</u>	<u>25%</u>	<u>Yes</u>	<u>FAC</u>
4. <u>Convolvulus sp.</u>	<u>20%</u>	_____	<u>NA</u>
5. <u>Juncus tenuis</u>	<u>2%</u>	_____	<u>FAC</u>
6. <u>Veronica americana</u>	<u>1%</u>	_____	<u>OBL</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
<u>168%</u> = Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
_____ = Total Cover			
% Bare Ground in Herb Stratum _____			
Remarks:			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 7 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 0 x 3 = 0
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 0 (A) 0 (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Wetland Non-Vascular Plants¹
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: S-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-12	10YR 2/1	98%	5YR 2.5/2	2%	C	M	Si. Cl. Lo.	
12-20	10YR 5/2	93%	10YR 4/6	7%	C	M	Si. Cl. Lo.	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): Approx. 2" Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): Within 12" (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Scrivanich-116th Street City/County: Kirkland/King Sampling Date: 7/20/15
 Applicant/Owner: Larry Scrivanich State: WA Sampling Point: S-7
 Investigator(s): JR Section, Township, Range: S32, T26N, R05E
 Landform (hillslope, terrace, etc.): Flat area Local relief (concave, convex, none): Concave Slope (%): NA
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Everett gravelly sandy loam, 5 to 15 percent slopes NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
1. <u>Pseudotsuga menziesii</u>	<u>10%</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Populus balsamifera</u>	<u>10%</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Betula papyrifera</u>	<u>2%</u>		<u>FAC</u>	
4. <u>Prunus emarginata</u>	<u>10%</u>	<u>Y</u>	<u>FACU</u>	
	<u>32%</u>	<u>= Total Cover</u>		
Sapling/Shrub Stratum (Plot size: 20')				
1. <u>Corylus cornuta</u>	<u>5%</u>		<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>30</u> x 2 = <u>60</u> FAC species <u>67</u> x 3 = <u>201</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>177</u> (A) <u>581</u> (B) Prevalence Index = B/A = <u>3.28</u>
2. <u>Rubus armeniacus</u>	<u>45%</u>	<u>Y</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
	<u>50%</u>	<u>= Total Cover</u>		
Herb Stratum (Plot size: 10')				
1. <u>Athyrium filix-femina</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Polystichum munitum</u>	<u>5%</u>		<u>FACU</u>	
3. <u>Chamerion angustifolium</u>	<u>5%</u>		<u>FACU</u>	
4. <u>Stachys chamissonis</u>	<u>30%</u>	<u>Y</u>	<u>FACW</u>	
5. <u>Rumex crispus</u>	<u>15%</u>		<u>FAC</u>	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>95%</u>	<u>= Total Cover</u>		
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
		<u>= Total Cover</u>		
% Bare Ground in Herb Stratum <u>5%</u>				
Remarks:				

SOIL

Sampling Point: S-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-13	10YR 2/2	97%	7.5YR 2.5/3	3%	C	M	Sa. Loam	
13-20	10YR 4/3	80%	7.5YR 3/4	20%	C	M	Sa. Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C

Site Photos



Looking south at Wetland A as it exits the subject property.



Off-site portion of Wetland A.



Buffer and non-wetland area west of Wetland A.



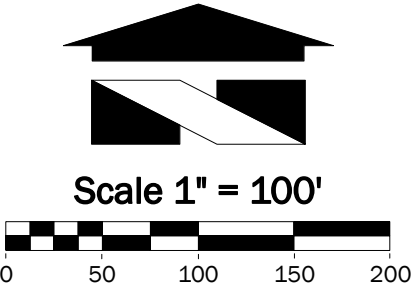
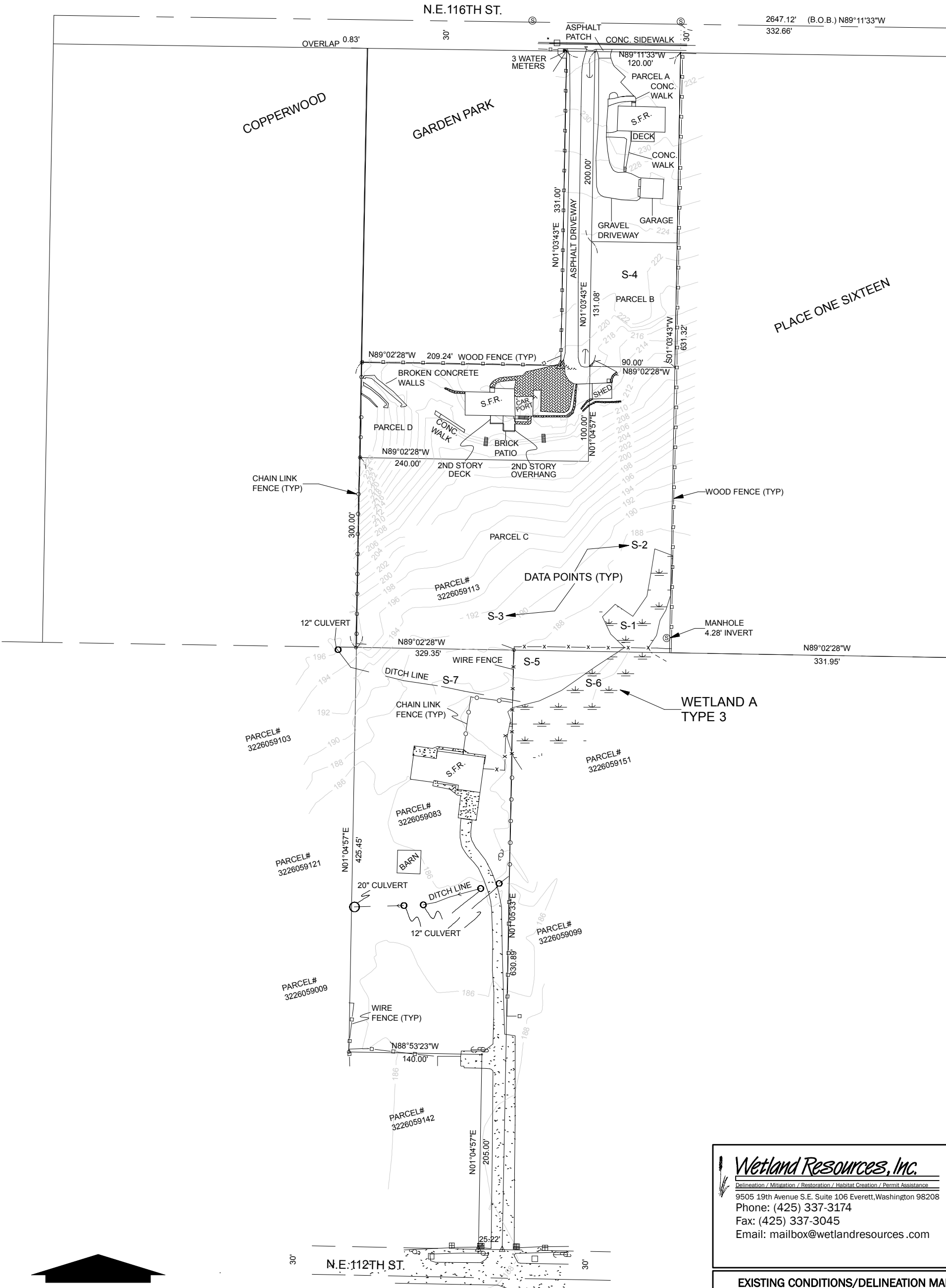
Buffer area near data point S-5.

Appendix D

Maps

EXISTING CONDITIONS/DELINEATION MAP
SCRIVANICH - 116TH STREET

PORTIONS OF SECTION 32, TOWNSHIP 26N, RANGE 05E, W.M.



Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
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Email: mailbox@wetlandresources.com

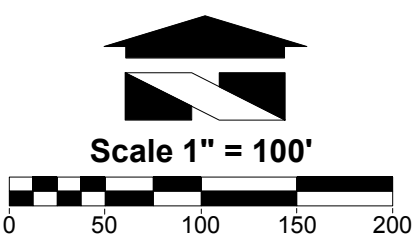
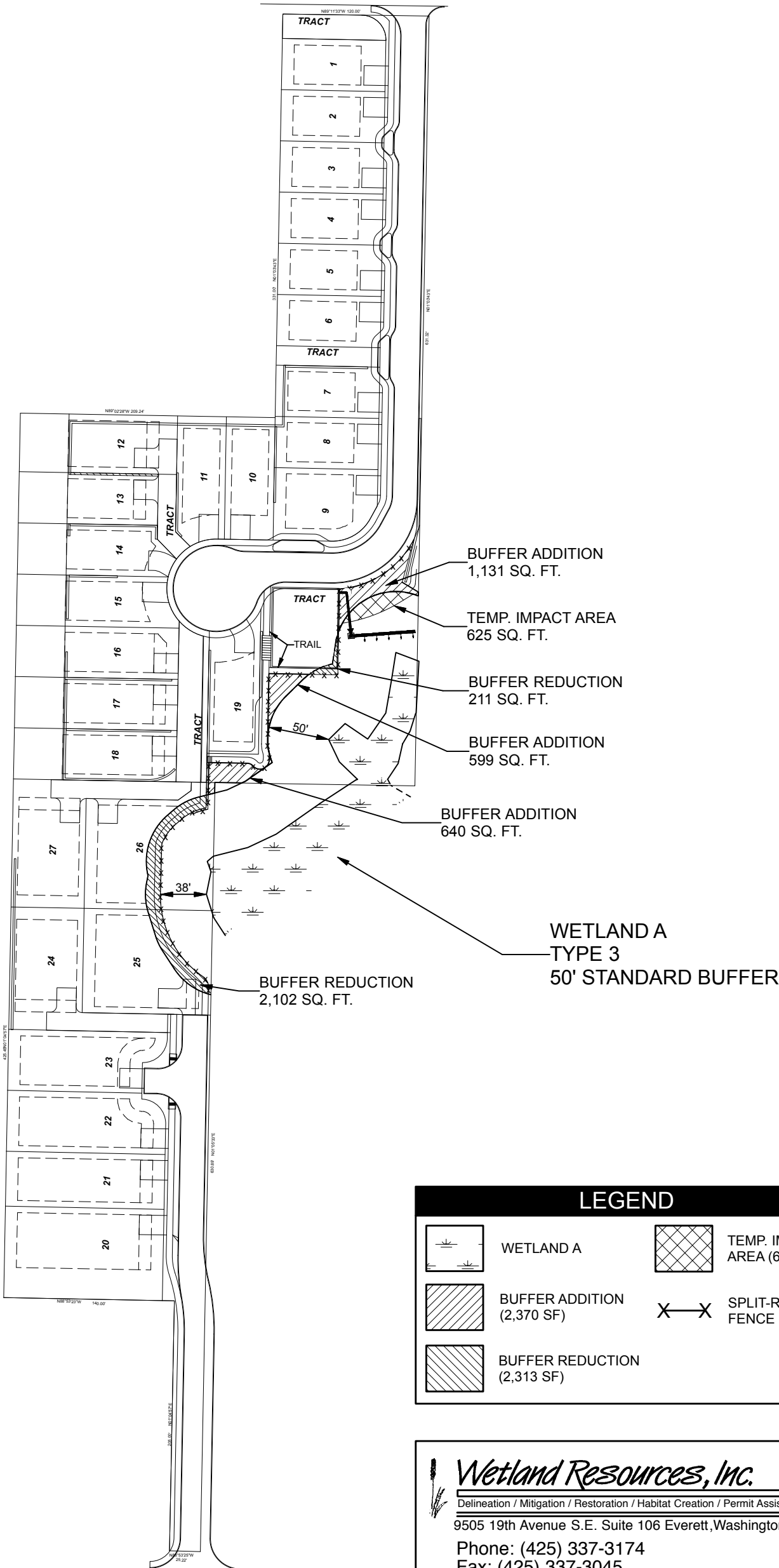
EXISTING CONDITIONS/DELINEATION MAP
SCRIVANICH - 116TH STREET
Kirkland, Washington

Sheet 1/3
Larry Scrivanich
P.O. Box 2174
Woodinville, WA 98072

WRI Job # 13185
Drawn by: JR
Date: 9\10\2015

SCRIVANICH - 116TH ST

PORTION OF SECTION 32, TOWNSHIP 26N, RANGE 05E, W.M.



LEGEND

 <p>WETLAND A</p>	 <p>TEMP. IMPACT AREA (625 SF)</p>
 <p>BUFFER ADDITION (2,370 SF)</p>	 <p>SPLIT-RAIL FENCE</p>
 <p>BUFFER REDUCTION (2,313 SF)</p>	



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SITE PLAN & CRITICAL AREAS MAP
SCRIVANICH - 116TH ST
Kirkland, Washington

Sheet 2/3

Larry Scrivanich
P.O. Box 2174
Woodinville, WA 98072

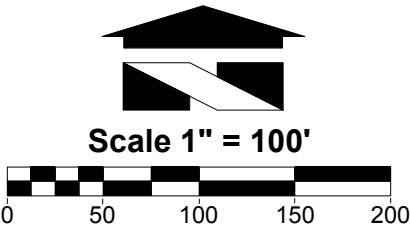
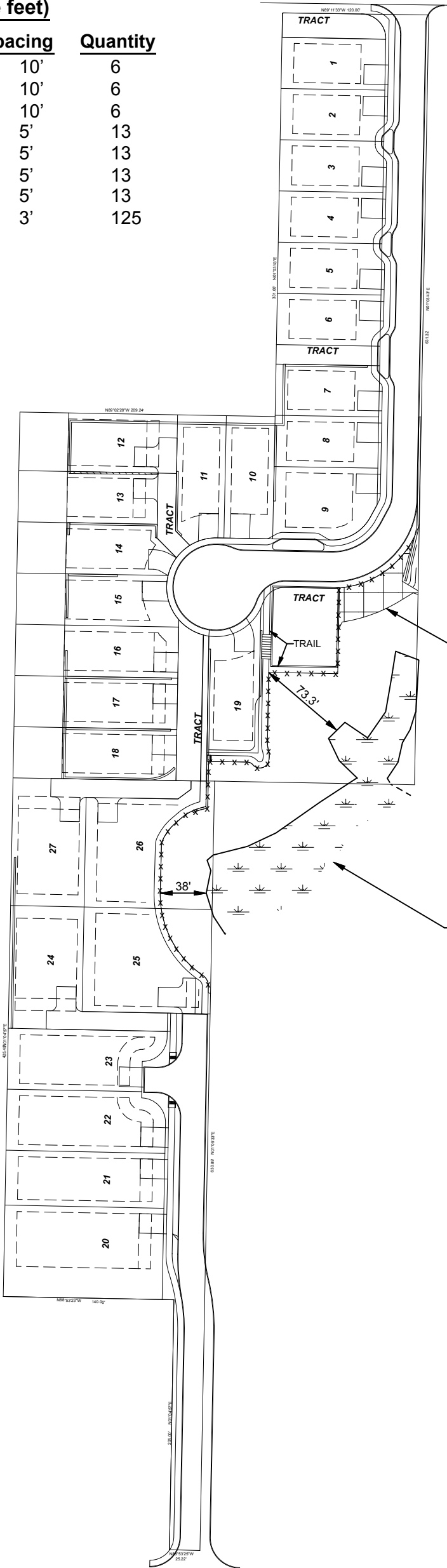
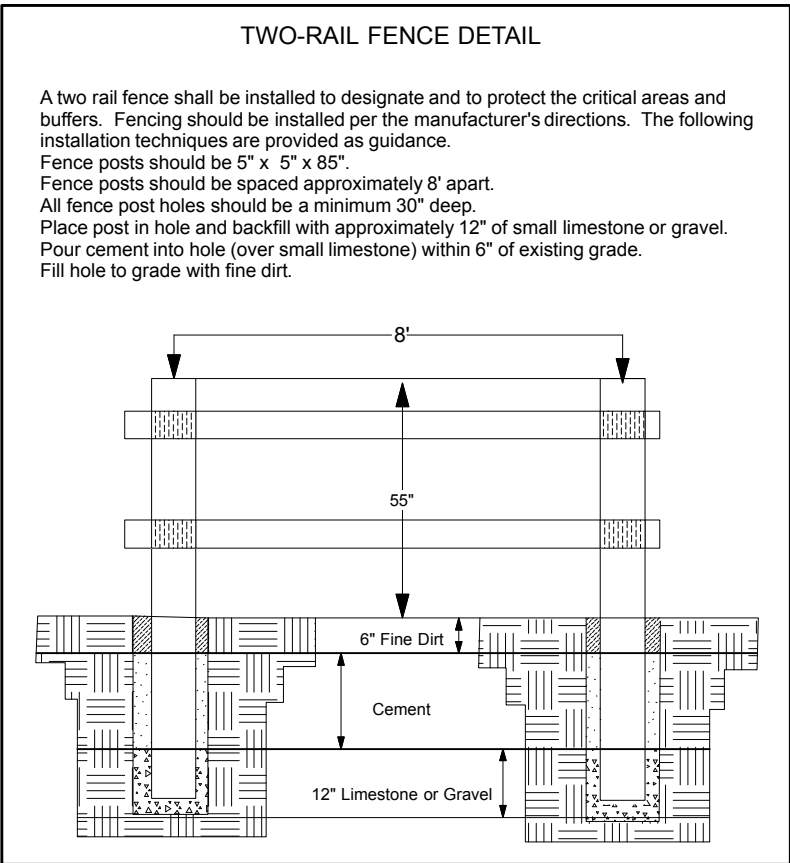
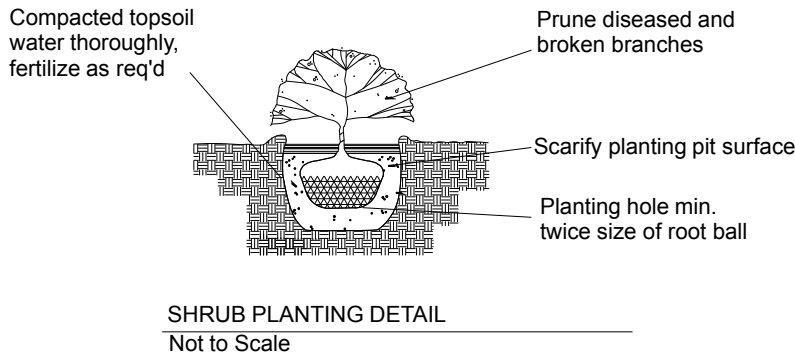
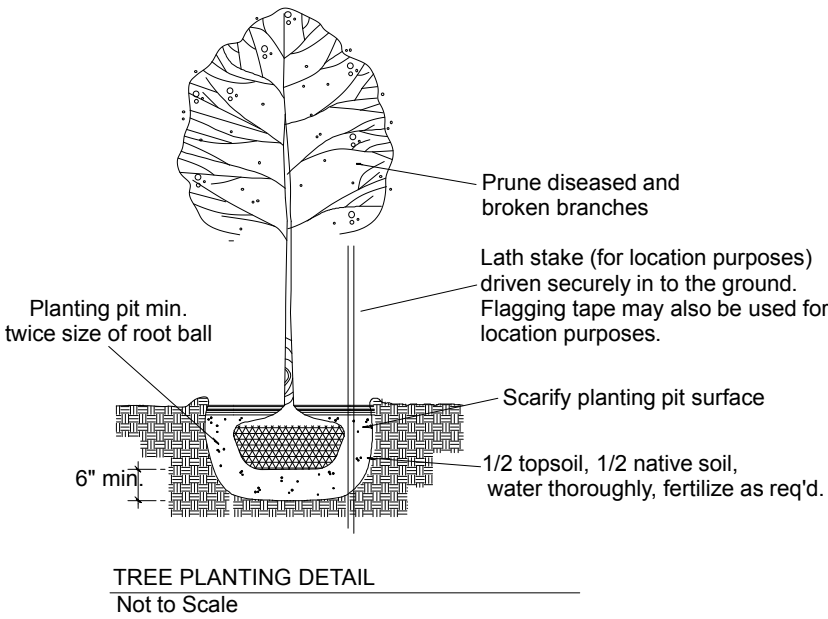
WRI Job # 13185
Drawn by: NW
September 10, 2015

BUFFER RESTORATION PLAN
SCRIVANICH - 116TH ST

PORTION OF SECTION 32, TOWNSHIP 26N, RANGE 05E, W.M.

Buffer Restoration Planting Plan (Approx. 1,756 square feet)

Table with 5 columns: Species, Latin Name, Size, Spacing, Quantity. Lists plants like Douglas fir, Big leaf maple, Western red Cedar, etc.



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BUFFER RESTORATION PLAN
SCRIVANICH - 116TH ST
Kirkland, Washington
Sheet 3/3
WRI Job # 13185
Drawn by: JR
September 10, 2015
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